

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 09/527,931 Confirmation No. 3919
Applicant : Mathieu et al.
Filed : March 17, 2000
TC/A.U. : 3729
Examiner : Rick K. Chang

Docket No. : P114-US

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

To Whom It May Concern:

Listed on an attached Form PTO/SB/08A is information known to applicant(s).

Applicants ask that the attached Form PTO/SB/08A be initialed and returned in accordance with MPEP §609. This statement is not intended to represent that a search has been made or that the information cited in the statement is, or is considered to be, material to patentability as defined in §1.56.

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- It is being filed before the mail date of the first Office Action on the merits; or
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a statement as specified in §1.97(e) is provided below; **or**

a fee of \$180.00 as set forth in §1.17(p) is authorized below, enclosed, or included with the payment of other papers filed together with this statement.

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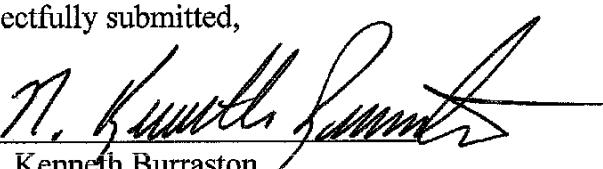
Fee:

No fee is due.

A check that includes \$180.00 for the above-identified fee(s) is enclosed.

This statement is filed as one part of a multi-part submission. The fee for the complete submission was included in an electronically filed submission on _____. Applicants request the foregoing fee be accepted for this statement. (See OG Notice dated 17 September 2002.)

Respectfully submitted,

By 
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Modified Form PTO/SB/08A

<p>Substitute for form 1449A/PTO</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p>(use as many sheets as necessary)</p>				<i>Complete If Known</i>	
				Application Number	09/527,931
				Filing Date	March 17, 2000
				First Named Inventor	Mathieu et al.
				Group Art Unit	3729
				Examiner Name	Rick K. Chang
Sheet	1	of	1	Attorney Docket No.	P114-US

U.S. PUBLISHED PATENT DOCUMENTS							
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant	Publ./Issue Date	Related [#]	Copy Enclosed
		Number	Kind Code ²				
1.	5861759			Bialobrodski et al.	1/19/1999		Yes

FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. ¹	Foreign Patent Document		Name of Patentee or Applicant	Publ. Date	T ⁶	Copy Enclosed
		Office ³	Number ⁴ Kind Code ⁵				
2.	JP	04-273458		Uchino et al.	9/29/1992	X	Yes

Examiner Signature		Date Considered
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* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication

¹Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

** Reference cited in parent application US Serial No. ____ 37 CFR § 1.98(d)

*** Pre-OG Notice By Deputy Commissioner Stephen G. Kunin dated July 11, 2003 waiving the requirement to file copies of US patent publications in applications filed after June 30, 2003.

& Notice dated October 19, 2004 by Deputy Commissioner for Patent Examination Policy waiving requirement to file copies of pending US patent applications if the applications are stored in the USPTO's IFW system.

Commonly owned US patent or application whose subject matter may be related to the subject matter of the instant patent application.



US005861759A

United States Patent [19]

Bialobrodski et al.

[11] Patent Number: 5,861,759

[45] Date of Patent: Jan. 19, 1999

[54] AUTOMATIC PROBE CARD
PLANARIZATION SYSTEM

[75] Inventors: Marian R. Bialobrodski; Marius R. Lupon, both of Danville, Calif.

[73] Assignee: Tokyo Electron Limited, Japan

[21] Appl. No.: 791,767

[22] Filed: Jan. 29, 1997

[51] Int. Cl. 6 G01B 11/00

[52] U.S. Cl. 324/758; 356/375

[58] Field of Search 324/758; 356/375

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"Probe Device and Prosing Method" Hitoshi

Primary Examiner—Thomas P. Noland

Attorney, Agent, or Firm—Allston L. Jones

ABSTRACT

The present invention provides an automatic probe card planarization system and method to planarize a first plane defined by a plurality of contact points of a probe card relative to a second plane defined by a top surface of a wafer supported on a prober, with the probe card intermediate the wafer and a tester with the probe card interfacing electrically with the tester to test the performance of the wafer. The planarization is performed by interfacing the probe card to the wafer by individually interfacing three points fixed on the tester with three points on the prober. One of the points on the prober being fixed, while the other two are height variable as a result of calculations by a processor. Additionally, a camera is used to measure the height of at least three selected contact points on the probe card relative to the plane of wafer, from which the position of the first plane relative to said second plane is calculated. With that information and the geometry of the prober and tester, the height variations necessary for the two height variable points on the prober are calculated and the height adjustments made to planarize the first plane relative to the second plane. Alternatively, the height adjustments can be included in the tester, or one in each of the tester and the prober.

11 Claims, 6 Drawing Sheets

